

US 5,549,155 describes an apparatus for cooling an integrated circuit chip. The apparatus comprises a cooling pipe being in contact with a pad, said pad being in contact with a surface of a circuit chip. The cooling pipe is maintained to the pad by means of a number of clips and the pad is kept in place on top of the surface of the circuit chip by means of holding fixture with a hole through which the pad extends. The holding fixture is secured to the motherboard by means of screws at each side of the circuit chip. This apparatus has the disadvantage that a substantial temperature gradient exists between the cooling pipe and the pad, thus limiting the cooling of the pad. Furthermore, the pad is kept in place by means of a holding fixture taking up a lot of space. Such space is seldom available on a motherboard. If the space is made available, such space severely limits the possibility of decreasing the space taken up by the electronic components in common. Finally, it may be very difficult to gain access with a screwdriver for securing the holding fixture to the motherboard.

REMARKS

Claims 1-42 are pending in this application. The specification has been amended to correct a U.S. patent number that was listed incorrectly. No new matter has been added by these changes to the specification.

CONCLUSION

Accordingly, in view of the above amendments and remarks, an early indication of the allowability of each of claims 1-42 in connection with the present application is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present

application, the Examiner is respectfully requested to contact John A. Castellano at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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By: _____

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SPECIFICATION AMENDMENTS SHOWING AMENDMENTS

US [5,539,155] 5,549,155 describes an apparatus for cooling an integrated circuit chip. The apparatus comprises a cooling pipe being in contact with a pad, said pad being in contact with a surface of a circuit chip. The cooling pipe is maintained to the pad by means of a number of clips and the pad is kept in place on top of the surface of the circuit chip by means of holding fixture with a hole through which the pad extends. The holding fixture is secured to the motherboard by means of screws at each side of the circuit chip. This apparatus has the disadvantage that a substantial temperature gradient exists between the cooling pipe and the pad, thus limiting the cooling of the pad. Furthermore, the pad is kept in place by means of a holding fixture taking up a lot of space. Such space is seldom available on a motherboard. If the space is made available, such space severely limits the possibility of decreasing the space taken up by the electronic components in common. Finally, it may be very difficult to gain access with a screwdriver for securing the holding fixture to the motherboard.